The following changes are on page 2 and 3 of the specification:

BRIEF DESCRIPTION OF THE DRAWING

Fig. 1 is a schematic illustration of an optical fiber.

Fig['s]. 2 is a graph of power transmitted vs. fiber position for prior art apparatus[; and].

Fig. 3 is an illustrative embodiment in accordance with the principles of this invention[; and].

Fig. 4 is a graph of refractive index variation with distance from the launch end of a fiber in accordance with the principles of this invention [.]

Fig. 5 is a plot of power transmitted vs. fiber position that results when light is launched into a fiber the refractive index of which varies as shown in Fig. 4.

Fig. 6 is a block diagram of a system using the fiber of Fig ['']s. 1 and 3.

Fig. 7 is a block diagram of a further system using the fiber of Fig['']s. 1 and 3.

Fig. 8 is a plot of energy loss vs. fiber position that results when light is launched into the fiber of Fig. 5 when a section of the fiber is exposed to a target chemical substance.

Fig. 9 is a plot of chemical concentration vs. fiber position that can be derived from Fig. 8.

The following changes are to the sentence beginning at the top of page 4 of the specification:

where P_0 is the power at the input end of the fiber, **P** is the power at a distance from the input end, **a** is the core radius, α is the absorption coefficient of the cladding, n_{co} and n_{cla} are the core and cladding refractive indices[.], N is a common mathematical designation for the number of segments used for the calculation; it represents the number of positions to which the calculation is applied, and η_i is the fraction of the power carried by core guided modes.

The following changes are to the sentence on page 7 beginning at line 15 of the specification:

The OTDR was able to determine the location of the moisture site to within 1cm using 850 nm light and the 1300 nm light was capable of being used to compensate for transmission [charges] changes due to effects other than moisture.

REGARDING THE REJECTION UNDER SECTION 112

The applicant refers to the interview of 25 March, 2004 in which the applicant explained that one skilled in the art would have the knowledge to alter the fiber parameters, that is altering core/cladding refractive indices, core diameters, absorption coefficients, etc (see page 5 of the specification) to achieve a constant power loss over the length of the fiber. The enclosed declaration of Dr. Robert Lieberman shows how these parameters can be varies, except with respect to diameter variation which, it is submitted, is apparent by the application of similar analysis.

REGARDING THE REJECTIONS UNDER SECTION 103

The Examiner rejected claims 1, 6, and 17-18 as being unpatentable over DiGiovanni in view of Tarbox or Yunoki claims 3, 5, 21-22, and 26-27 as being unpatentable over DiGiovanni in view of Tarbox or Yunoki and further in view of

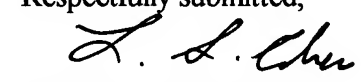
Hamburger; and claims 2 and 4 as being unpatentable over DiGiovanni in view of Tarbox or Yunoki further in view of Cramp. These rejections are traversed. The applicant refers to the interview of 25 March 2004 in which the same rejection applied to the parent application was discussed. The Interview Summary of that interview is also referred to.

Specifically the applicant refers to the following limitations: 1) "the fiber having at least one parameter that varies from an input end of said fiber to an output end thereof in a manner to maintain a constant power loss per unit length over the length of said fiber.", as set forth in pending claim 1, 2) the "fiber having at least one parameter that varies from an input end in a way calculated to make the power loss vary in a controlled way over the length of the fiber."' as set forth in pending claim 17, and 3) the "fiber having at least one parameter that varies as a function of position within the fiber to compensate for any non-linear power loss over the length of the fiber." as set forth in claim 21. As explained in the interview DiGiovanni does not teach or reasonably suggest the fiber having at least one parameter that varies from an input end of the fiber to an output end to maintain a constant power loss per unit length over the length of the fiber. Further as also explained in the interview both Tarbox and Yunoki fail to teach or reasonably suggest the above limitation, and only teach that the attenuation of the fiber is uniform over the length of the fiber. Further with respect to claim 17, non of Digiovanni or Tarbox or Yunoki teach or reasonably suggest a" fiber having at least one parameter that varies from an input end to an output end in a way calculated to make the power loss vary in a controlled way over the length of the fiber." since the references only show uniform attenuation over the length of the fiber but varying a parameter to make power loss vary in a controlled way over the

length requires both uniform and non-uniform varying of the power loss over the length of the fiber.

It is submitted that considering the foregoing the application is now in condition for allowance and a notice thereof is respectfully requested. If the Examiner wishes to discuss the application with the undersigned a telephone interview will be welcome.

Respectfully submitted,



Lawrence S. Cohen, Esq.
Date: November 5,2004
Reg. No. 25,225

Law Offices of Lawrence S. Cohen
10960 Wilshire Boulevard, Suite 1220
Los Angeles, California 90024
Phone 310-213-6898; 310-231-6899 Fax

cohenlaw@cypressmail.com